

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/001677

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. ⁷: F15B 15/26, 13/01

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
See below under "Electronic databases searched"

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPTO

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DWPI : IPC : F15B 15/26, 15/00, 13/01, 13/00 with keywords ball?, lock+, inner+ and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4951552A (FOX) 28 August 1990 The whole document	1-16
X	US 2713328A (DRISKEL et al.) 19 July 1955 Column 3, line 57-column 4, line 4 and figure	1-16
P, X	EP 1473466A1 (LOGITRANS A/S) 3 November 2004 The whole document	1-16
X	US 6186047B1 (BARUFFALDI) 13 February 2001 The whole document	1-3, 6-8, 13-16

☒ Further documents are listed in the continuation of Box C

☒ See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 12 January 2005	Date of mailing of the international search report 20 JAN 2005
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4635536A (LIU et al.) 13 January 1987 The whole document	1-16
A	EP 0170873B1 (KNORR-BREMSE AG) 16 September 1987 The whole document	1-16

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2004/001677

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
US	4951552				
US	2713328				
EP	1473466				
US	6186047	AU	17688/97	EP	0879362
		WO	9730291	IT	TO960100
US	4635536				
EP	0170873	DE	3428228		
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					